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Veröffentlichungsversion / Published Version

Zeitschriftenartikel / journal article

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Empfohlene Zitierung / Suggested Citation:

Mika, T. (2009). The effect of social and institutional change on data production: the case of welfare state reforms on the rise and decline of unemployment and care-giving in the German pension fund data. *Historical Social Research*, 34(3), 115-137. <https://doi.org/10.12759/hsr.34.2009.3.115-137>

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The Effects of Social and Institutional Change on Data Production. The Case of Welfare State Reforms on the Rise and Decline of Unemployment and Care-Giving in the German Pension Fund Data

Tatjana Mika *

Abstract: »Auswirkungen sozialen und institutionellen Wandels auf die Erstellung statistischer Daten. Die Messung von Arbeitslosigkeit und ehrenamtlicher Pflege in den Lebensverlaufsdaten der Deutschen Rentenversicherung«. Using longitudinal life-course data of the German pension fund, the paper discusses effects of first-time institutionalization and of institutional filters on data production on the fields of unemployment and care-giving. Concerning (1) first time institutionalization, the data show at certain historical moments an increase/decrease which is due to the new institutional rules and regulations and not to a drastic social change. This period effect is important if different age cohorts are compared at the same age, but different social policy periods are encompassed. (2) Institutional filters also influence the gathered information due to eligibility rules: The change in the unemployment assistance scheme resulted in an increase of the number of the registered unemployed, but the longitudinal data show that the registered unemployed have also been partly exchanged.

Keywords: Longitudinal Analysis, Process-Generated Data, Social Bookkeeping Data, Public Administrative Data, Institutional Filters, Measurement, Social Security and Public Pensions.

1. Social Change, Institutional Change and Data

Welfare State institutions are the object of institutional change through reform. The initiative for a particular reform often stems from a particular perception of actual or needed social change. The article looks into two of such welfare state reforms and evaluates if the life-course data provided from the statistics of the German pension fund – available also as scientific use files – could be a valuable source to observe the interaction between welfare state institutions and society. The first part of the article reflects upon the conditions under which process produced data cover a particular social situation accurately. There are

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several of such conditions detected, some of which concern the administrative process of data collection, others the quality of data preservation and production of statistical data from administrative files. The second and third part of the article reflects the quality of life course information about voluntary caregiving and long-term unemployment around the historic moments of welfare state reforms in 1995 and 2005. In April 1995 the new care insurance has been introduced which covers parts of voluntary home care in the family or neighbourhood with a new benefit, the so called care allowance. In January 2005 the social assistance system for long term unemployed has been completely overhauled in a way that united two formerly separate institutions into one with changed legal conditions.

Process produced data stemming from welfare state institutions could be a valuable source about the interaction between social change and the institutions themselves. The condition for such an analysis with process produced data is that the data include both the particular social phenomenon that is subject of the analysis such as “unemployment” as the decision of a welfare state institution about this social situation such as “a person receives unemployment assistance”.

1.1. Five steps to judge the adequacy of process produced data for a particular research question

In order to check if process produced data are adequate for such an analysis, the data must go through a thorough inspection. Consecutively, I propose a five step check to assess the adequacy of process produced data from welfare state institutions for research on social situations. Appending the scheme from Bick/Müller (1984), the check includes criteria reflecting upon the information input in the administrative process as well as the conditions of data production for statistical and research purposes.

The right hand side of the table describes the steps from a particular research interest to the use of the administrative data by a social security administration as Scientific Use File. The left hand side enumerates criteria of quality which should be checked by the researcher or the data-editing institution.

Table 1: Steps to check for the adequacy of process produced data for a social science project

Indicators for quality of process produced data	Steps to produce adequate scientific data from administrative procedures
	Defined social phenomenon (e. g. “employment”)
1) Clear legal definition of the phenomenon 2) Legal definition is identical or very close to the scientific one 3) Contribution or take-up is obligatory 4) Law enforcement is in place	
	First step: Check of Coverage (“Only socially insured employment”)
1) Procedures are easily accessible 2) Professional training of information givers 3) Accountability 4) Record check from client	
	Second step: Check of Accuracy (“Individual records of entitlements based on contributions from employment”)
1) No discretion in the procedure 2) Automatic data processing 3) Output control from client 4) Storage as main and obligatory task	
	Third step: Data processing preserves information (“Pension fund’s account of contributions from employment across the life-course”)
1) Legal obligation of reporting 2) Suitable data transfer 3) Independent agency for reporting	
	Fourth step: Statistical reporting (“Statistics on actively insured population”, “Statistics on pension fund entitlements”) includes nine different variables of socially insured employment
1) Accurate documentation 2) Little transformation due to de-personalization	
	Fifth step: Research data from process produced data (“Scientific Use Files of the actively insured” and “Scientific Use File Sample of the insured population records”) provides one variable on socially insured employment

1.2. First step: Check of coverage between researchers definition and administrative procedures and take-up behaviour

Because process produced data have not been collected for the research question, but for the administrative procedure, there can be a considerable gap between the researcher's definition of a social phenomenon and the administrative definition according to a particular legal regulation (Bick/Müller: 1984, 134). The first step is therefore to check whether or not the legal definition overlaps with the understanding of the phenomenon by the social scientist. Because in many cases both definitions of a particular social situation overlap to a certain degree, I call this the coverage problem. The check of the degree of coverage requires knowledge of the legal and administrative rules according to which the administrative procedure has been conducted. Coverage is high if the legal definition of a particular phenomenon is identical with the scientific definition. Such an overlap should not be taken for granted, because legal definitions are often more narrow than social ones in order to an easier verification or to limit services and thereby spending to a fraction of the persons in the particular situation. The overlap in the coverage can be measured in advance on the theoretical level if the legal definition is clear and narrower than the scientific one. In such cases it is clearly defined from the outset which part of the required population for the original research question is covered from the administrative procedure. If the administrative data covers only a clearly defined subgroup of the part of the population the researcher had defined in advance, further consideration of the data as source might depend on the size of the subgroup and quality of alternative (survey) data to further pursue the research project with process produced data.

The coverage suffers furthermore from non take-up behaviour of the citizens in the case of services like social assistance. Non take-up behaviour is absent if take-up is obligatory and rigorous law enforcement is in place like in the case of compulsory schooling. It is also reduced if the institution and its rules are well known and generally appreciated. Non take-up behaviour is therefore far more common in means-testing, poverty related welfare state schemes such as social assistance (Becker/Hauser: 2005, 221) and far less common with generally inclusive institutions such as the pension insurance. Coverage is also problematic if the institution is not well known, the procedures might be unpleasant and intrusive, but also if the service is minor and/or requires major efforts from the citizen to get it. Non take-up behaviour is a serious limitation to the usage of process produced data, because it causes almost certainly a selection bias in the population included in the data. Non take-up can be assessed with other sources like survey data (Karstedt-Henke: 1984, 161).

The insurance for old age in the pension fund is obligatory for major parts of the population. Non take-up of the insurance is therefore not possible. The old age pension as such is then not obligatory, but depending on the request from

the side of the insured person. This could cause non take-up behavior if people do not know about their rights, but this problem is not large in the case of old age pensions, because the pension fund is well-known and many people are eager to retire as early as possible, especially the long-term unemployed (Brusig: 2007, 11).

Non take-up problems could be more prominent in care insurance and unemployment assistance for different reasons, the two examples of social services discussed below. Care allowance is paid only after a thorough inspection of the situation of the person in need of care in their home environment. This procedure could be considered intrusive and therefore avoided by some families. In some cases the need might also be not felt because the transition from informal help for family members to care in the definition of the care insurance is often gradual and not sufficiently evaluated from the care-givers. In the case of care-giving, the consequences of non-take-up behaviour for data quality will be discussed below.

1.3. Second step: Accuracy of process produced data

The quality of process produced data depends on the accuracy of the administrative procedure in collecting all needed information and adding all relevant documents to the record. Accuracy of data depends thereby in the first and most important stage on the input in the administrative procedure. Data can be distorted because of misunderstandings between citizens and the administration, because administrative standard forms are not understood and filled out with wrong data. Accuracy is generally higher if experts like lawyers interact with the administration. In the case of the pension records, it is not the insured person herself, but the employer who is obliged to deduct part of the income from employment and to pay contributions to the pension fund (Ost/Mohr/Estelmann: 1998, 223). This obligation of a third party improves data quality on income for two reasons: firstly the employer is often more experienced and educated to deal with large administrative organizations like the pension fund and secondly the act of non compliance would be a crime, because the contribution to the pension fund is legally the property of the employee. However, if employer and employee would be both dedicated to cover up part of the income from work it is rather difficult to detect those cases of deliberate tax and social security fraud. Other social insurances obliged to pay contributions in favor of their clients towards the pension fund can also be regarded as experts in the communication with the insurance. The cooperation between the different social security administrations is a legal obligation and can be enforced by law.

An important step to accurate data is the process of data cleansing with cooperation of the insured person. A print-out of the pension fund record is handed over to the insured person and he or she is requested to check and com-

plete the record. Matched data from the Federal Employment Agency and the Pension Fund differ in many cases considerably. About 10% of the information was not identical or similar, even though the source of the original information was the same (Wübbecke: 2005, 108). In most cases, the pension fund record is more complete and is therefore considered to be more accurate (Wübbecke: 2005, 111).

Citizens' rights to check their administrative records could also improve data quality in other administrations. However, participation in a data cleansing procedures requires time and effort. Most citizens will use a right to check a record only if this procedure leads to higher benefits or better services like in the case of the pension fund. Administrative processes are based on data delivered from several sources. A main source is often the client who is asking for a specific service and handing in all information required to be entitled to receive it.

In some cases information is evaluated from experts and some procedures are obligatory. Medical expertise is p.e. an obligation for persons asking for a disability pension. Some administrative procedures are initiated from the administration, because a legal obligation requires the administration to act, others are always initiated from a citizen asking for a particular service. In the case of the pension fund, the insurance for most employed persons is obligatory and only for a few a deliberate option to provide for disability and old age. Social insurances have therefore a legal duty to care for the coverage and have law enforcement rights and duties. This task includes the search in employer's files in order to detect cases of non-compliance with social security institutions. Other welfare state institutions like the health insurance, care insurance and unemployment insurance are also obliged to cooperate with the pension insurance. Financial transaction between those institutions and the pensions fund are the main reason for data exchange. Mistakes can happen if administrations lack at a particular moment the capacity to fulfill their administrative duty. This is likely to happen in a time of introduction of a new scheme with new tasks of cooperation. Such a change occurred in 2005, when municipalities were for the first time required to pay contributions to the pension fund for unemployed persons.

As far as data are linked to contributions, the employer is obliged to keep a copy of all the transactions towards the pension fund and has to inform the employee at least once a year. Data on financial transactions are therefore far more reliable than other data collected on the way of the administrative process, because more persons or institutions are obliged to keep records.

The main reason for the thorough documentation of all payments made to the pension fund records is the future calculation of a rehabilitation, disability pension or old age pension. Because the German pension is calculated on the basis of all contributions over the whole lifespan – and not only on the last years income – the documentation of all facts about the employment history

matters in the end in the administrative process. The collection and preservation of data over time is therefore a major task of the pension fund and not only a secondary task for means of statistical reporting like in other administrative processes.

Data are also more reliable if office employees are convinced that the documentation is a major task in their prime professional activity and not only a byproduct for statistical reporting tasks unrelated to their actual work. The same procedure of handing over data to the administration can include both kinds of information, legally enforceable on one side and therefore arbitrary to administrative procedures needed only for statistical reporting. The notification of employers to social institutions (DEÜV) includes the legally enforceable indication of the employee's income from work, but also information on the profession and the highest level of education. While there are no missing data in the income information, there is a high level of missing or inconsistent data on the profession and the highest level of schooling (Drews: 2006, 6). Data on those two dimensions are often considered to be unreliable to use them for statistical purposes. This shows that employers are well aware of the difference between data of both kinds even though the reporting duty includes the information on profession and highest level of education.

1.4. Third step: Data processing and storage

Data input in the administration is not necessarily suitable for automatic data processing. In many cases, clients show up to an office of the pension fund and the record includes afterwards proofs of different kinds in a paper record. Even if automatic data processing exists in an administration, it is not sure that all provided information is taken into this system, because not all decisions can be made by data processing. Data processing is best included in administrations which have no discretion in the decision making process and which handle large amounts of numeric input like financial contributions and benefits in the administrative process. The pension fund is, concerning old age pensions, such an administration. The pension law leaves no room for discretion and the decision is mainly based on numeric or binary information. Therefore, the pension fund agencies have, from the after war period on, shifted their administrative procedures to automatic data processing. Automatic data processing offers the opportunity to copy and analyse large quantities of information about the decision making process for statistical reporting.

Not all records are well preserved in archives over time. Administrations with more acute tasks and no waiting period requirements are less likely to store data for decades, because archiving is expensive and serves in their case no legal duty. Records are therefore often destroyed (Brusten: 1984, 253). If only a part of the records are kept, mainly those with ongoing and pressing needs, a selection bias limits data quality. The pension fund puts more efforts

into the storage of accurate data over decades, because the main task of the pension fund is, for the longest part of the individual life-course, to store data on the insured person's employment and on other relevant social events like child birth for the calculation of the future pension. Only after retirement in old age, the pension fund starts to stop data updates for the insured person and keeps only the basic information about the calculated pension fund credit points for the pension payments.

The clients are the best providers of data quality also for the storage of past information in the pension fund accounts through the process of data cleansing. Until retirement and even later on, insured persons are entitled to indicate facts and circumstances that may lead to a higher pension. People who approach pensionable age are increasingly keen to indicate all needed life-course information and improve thereby data quality. The oldest age cohort that is included in the sample, those born in 1940, show to 98% a record which has been cleansed with their compliance. This rate drops continuously for later born age cohorts. For those born in 1951, the proportion of cleansed records with compliance of the insured person is down to two thirds (64%). The youngest birth cohort included in the sample has only about a third cleansed records with cooperation and about a quarter is still in the process of the first record cleansing. The pension fund tries to engage clients more in continuous data cleansing and offers since 2004 an electronic access to the personal pension fund account, but only a tiny minority of the insured population registered already for this service (Birkelbach/Schulze-Haddouti: 2004).

A lack of record cleansing leads most likely to more gaps in the employment history and consequently to an underestimation of (future) pension entitlements. Cases with automatic data cleansing are admittedly less comprehensive, because they include only facts delivered from third parties like employers or other social insurances and lack the scrutiny of the insured person that is interested in the complete record in order to receive the highest possible pension.

1.5 Fourth step: Quality of data produced for statistical reporting

Process produced data are most often used for statistical reporting about administrative activities. For this task, extracts are taken from the original records. The closer the original procedure to the tools of reporting is, the better the transformation from the record to the statistic will be. Automatic data processing is a first and very important condition for the transmission from records to statistics. A further advantage would be a common IT-Platform that avoids media breaks. Because administrations like the pension fund most often use specific original programs, while statistics use common software packages, this condition is often not met.

Data for statistics are checked more carefully, if a legal duty of reporting exists. In the case of the pension fund, a legal norm in the Social Code IV re-

quires continuous reporting from the pension fund to the government (Mika: 2006). This reporting is done by specific departments which have this as their only professional task. The data check of such departments is a further condition for high data quality, because such departments accumulate knowledge and detect therefore more easily abnormal changes in the data which are due to mistakes in the transformation from the record to the statistical notification.

Statistical reporting should be accompanied by complete documentation and the documentation should be stored as carefully as the data themselves. To meet this condition, outside users of statistical data are quite necessary. They require more information than insiders. The government can be such an external statistics user, asking for proper documentation, but also scientists can improve documentation requirements.

1.6 Fifth step: Scientific data produced from statistical data

The production of scientific data from process produced statistical data as origin requires often a further transformation due to data protection requirements. Such a transformation should be only marginally invasive, but protect the trust in privacy protection. The data should also be documented in a less detailed, but more comprehensible way, because social scientists are usually not experts in the legal field of social security. One way to combine the goals of data protection and comprehensiveness is to transform longitudinal information into broader categories, thereby uniting different very specific administrative classifications (Stegmann: 2007, 27). Such a pooling e.g. is the combination of nine different types of socially insured employment into just one category, which is relevant for the whole period covered by the data (p.e. from the entry in the labour market in the year 1954 until 2007). The downside of this transformation can be that changes in the legal conditions are varnished.

2. Data and Methods

2.1 The German Pension Fund

The participation in the statutory pension insurance scheme is mandatory in Germany for all persons being employed in the private or public sector (Pieters: 1997, 115). The German Pension Fund as institution comprises all federal and state levels of mandatory pension schemes from inability to work including rehabilitation over regular old age pensions up to widowers' pensions (Ost/Mohr/Estelmann: 1998, 209).

Additionally, contributions are paid out of the unemployment insurance in the case of the unemployed, out of health insurance in the case of long-term illness, and from the state for persons in military or civilian national service. The majority of the population thus comes into contact with the pension insur-

ance system at some point or another in life, and the pension insurance system owns data on about 90 % of the entire population. The statutory old age and disability pension – due to its income replacement tasks and broad social basis – provides the main income source after retirement. Over and above this function, the pension insurance scheme provides for rehabilitation in the event of inability to work. It therefore also includes data on health status with regard to working ability of its constituents. Since the 1960s, all data have been collected in individual administrative accounts. These are the original sources for present and retrospective statistics (Rehfeld/Mika 2006).

2.2 The “Forschungsdatenzentrum der Rentenversicherung (FDZ-RV)”

The FDZ-RV transforms the data of the German Pension Fund into micro data files which can be analyzed with statistical tools on PCs using programs such as SPSS, Stata or SAS. As data files are offered, as the most important ones, Scientific Use Files as a general basis for research questions that mainly concern contributions and benefits. Public Use Files are a tool for teaching university courses and are limited in their content, especially with regard to the number of cases, and are therefore easy to handle. Finally, data for special research interests are offered (Themendatensätze), e.g. demographic data files, which own a more limited scope. These files include less variables, but provide more detailed information. All data can be made available directly by the FDZ-RV to social researchers.

2.3 The Data

The analysis uses process-produced longitudinal statistical data drawn from the pensions fund records. The data sets are based on the real pension fund records, in which information on gainful employment is collected as well, as notifications on periods of illness or unemployment and similar events. Childbirth is also part of the life-course in the pension fund record, because for every child born, a contribution is paid by the state to the individual pension account for one parent. The data for scientific empirical analysis are a sample drawn from the original records, but leaving out information that could lead to personal identification like the social security number, name and address and the employer's name and address.

The longitudinal data set offer information from the age of 14 on, as far as the pension fund knows anything about the activity of the person in the sample until the age of 67. The analysed data set presents a disproportional sample of all actively insured persons of a specific year. The data set is called ‘Sample of the insured population records’, Versichertenkontenstichprobe (VSKT). For this paper, the Scientific Use File drawn from the 2007 sample has been used (SUFVSKT2007), a subsample of 60.000 persons from the larger sample.

The longitudinal information is presented generally on a monthly basis. For each month, the data shows if the person has been gainfully employed or has had a different social situation, like unemployment, care-giving, sickness, or if no information at all has been collected. Child-care is assumed to be the main occupation for some years if the birth of a child is registered and no gainful employment has taken place afterwards.¹ Employment has priority status in the data and all other social situations are second in rank. A lack of information means that a person is in none of the other social status situations. Such a gap in information can either represent self-employment without social insurance obligation, or unemployment without being entitled to benefits from the Federal Employment Agency, in most female biographies in West Germany it signifies a period of homemaking.² If voluntary care-giving occurs as the only occupation, this shows up in the data as the prime social situation of the person. The prime social situation in the data would be 'employed', if the person combines gainful employment with care-giving or receives unemployment benefits while working.

However, in such cases the information about care-giving or unemployment is not lost, but preserved in a second longitudinal variable. This accompanying variable shows for every month of the biography, if a person is simultaneously care-giving or unemployed, while also being employed. However, the following analysis is using only the information about the prime occupation in a given month.

3. Case Study 1: The Rise of Recorded Voluntary Care-Giving due to Establishment of the Care Insurance

Unlike socially insured employment, care-giving is a rather new category of an activity that plays a role in the life-courses of the German population. The introduction of the care-insurance has been a reaction to the perceived change in the (West) German society that care for elderly family members competed as social activity with gainful employment. The care insurance was established in order to honour care-activities and improve old age security for care-givers. Care-giving in the narrow sense of the German care-insurance does not necessarily coincide with the public or scientific understanding of caring. The politi-

¹ The birth of a child is registered in the pension record of one of the parents. This is in most cases the mother, because there is an income tap that hinders higher earners to profit from the child benefit. The child benefit in the German pension fund accounts for children born before 1992 1 credit point, for children born after 1992 the contribution is 3 credit points. One credit point is the average pension entitlement of an employed person in Germany in a year of full employment.

² This fact can be proven with the data from the AVID 1996 project, where process-produced data were combined with survey data.

cal will to limit expenditures in this new institution brought about a definition of care-giving that excluded support in homework, unlike in other countries, where homework is an essential part of caring (Theobald: 2006).

3.1 The Institution

The long-term care insurance offers benefits in the case of permanent need for help with personal mobility or hygiene. The need for long-term care has to be proven via a medical assessment. Benefits from long-term care insurance are received by persons who need regular help with mobility and hygiene because of long-term impairment of their health. Physical or mental impairment that only leads to problems with housekeeping, e.g. cleaning, cooking etc. does not entitle to benefits from the health or care insurance (Ost/Mohr/Estelmann: 1998, 144). Neither does temporary impairment due to recurrent diseases. Need is assessed according to a catalogue of assistance for all kinds of acknowledged disabilities concerning mobility and hygiene. For each impairment, a specific, rather short, time span is designated in this catalogue. The assigned time of assistance is therefore rather short and time pressure constitutes a stress factor for most professional caregivers.

Payment by long-term care insurance is then assessed according to the gravity of the case. On a three-step scale, the need for care is either 'considerable' (Grade 1), 'severe' (Grade 2) or 'extreme' (Grade 3). The benefits of the care insurance are not meant to cover all the costs of institutional or home care, but they cover about half of the expenses of accommodation in a nursing home. Care insurance replaced the financial support given by the welfare state in the case of long-term need for care before 1995 and altered the benefits in three respects:

- 1) The benefits no longer depend on means testing, but are only linked to the proven need of care (compared to the social assistance scheme)
- 2) The benefits are also available for less severe cases of long-term care (compared to the coverage by the health insurance targeting severe, short-term cases)
- 3) Voluntary home care, arranged by the patient itself, also entitles to benefits.

Overall, Germans have to spend less out of their own pockets in case of long-term need for care, compared to the situation before 1995/96. The introduction of long-term care insurance has been a particular gain for pensioners, because the benefits are financed in a pay-as-you-go scheme. They therefore paid rather small contributions over their lifetime for full coverage by this new social security scheme.

3.2 Institutional Changes

Until 1991, voluntary care-giving played no role in the calculation of the pension in Germany and has been therefore not included in the pension fund re-

cords. However, from 1992 on, the pension fund recorded care-giving episodes because they were considered a period 'under consideration' and could, under certain further conditions, lead to higher pension benefits in the end. In this way, the 'consideration period' has opened the opportunity for caregivers to pay contributions to the pension fund out of their own purse (Reinhardt 2007). Care-giving was recorded if a medical assessment had determined that long-term care is needed and the estimated need for assistance has reached ten hours in the week at least. However, care-giving periods were not recorded retrospectively for the time before 1992.

An important institutional change occurred in 1995 with the introduction of the care insurance. Since then, contributions are paid from the care insurance towards the pension fund. If the person that is in need for long-term care decides to opt for a home care arrangement, he or she has since 1995 received a benefit from the care insurance. Cash payments for voluntary care at home, called 'care allowance', have been introduced in order to encourage home care by laypeople. It has been the main new feature of the newly launched compulsory care insurance.

Long-term care insurance offers benefits in the case of permanent need for help with personal mobility or hygiene. The need for long-term care has to be proven via a medical assessment. Benefits from the long-term care insurance are received by persons who need regular help with mobility and hygiene because of long-term impairment of their health. Physical or mental impairment that only leads to problems with housekeeping, e.g. cleaning, cooking etc., does not entitle to benefits from health insurance. Neither does temporary impairment due to recurrent diseases. Need is assessed according to a catalogue of assistance for all kinds of acknowledged disabilities concerning mobility and hygiene. Care allowance is paid in three grades, according to the gravity of the case. Home care is supposed to fulfil the wish of most elderly in need of long term care to stay in their familiar private surroundings and is also less expensive than institutionalised care, thereby putting less financial burden on the social security system. The person who is willing to undertake the care-giving is supposed to receive a fair share of this payment and, in addition, receives contributions to the personal pension account. The goal of this social security provision is to compensate for the reduced employment opportunity of caregivers. Given the fact that the overwhelming majority of care-givers are women, this fits into the pension policy from the 1980s on to provide old-age pension benefits to women for unpaid work in the family.

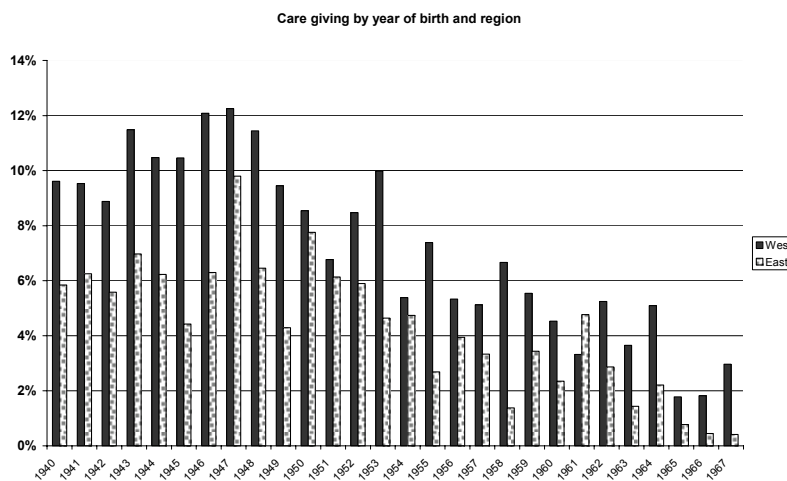
Contributions from the care insurance are far more favourable for the caregivers than 'periods of consideration' for care-giving. One aspect of the contributions is that voluntary caregivers are now considered to be compulsorily insured like people in gainful employment. Periods of compulsory insurance are linked to many favourable legal conditions like the possibility of early retirement or the receipt of a disability pension. It depends on the overall biog-

ographies of the care-givers, whether they can take advantage of these more favourable legal conditions. The most important immediate advantage of the new regulation is that credit points are accredited by the pension fund without contributions out of the individual's own means.

3.3 Effects on the Data

The possibility to gain credit points in the pension insurance for care-giving by deliberate contributions between 1992 and 1995 was rather unpopular. Only for some birth cohorts, we find 0.5 % of such contributions. Those persons have been around the age of 50 at the point of time of the introduction of this possibility. This very low percentage hardly gives the true picture of the actual amount of voluntary care-giving in these years in Germany. The introduction of the care insurance, which linked voluntary care-giving to automatically paid contributions, increased the measured amount of care-giving. Graph 1 shows the percentage of care-giving since April 1995 across the age cohorts in the pension fund records. The institutional change obviously provided for being registered as care-giver in the data.

Graph 1: Care-Giving Across Different Age Cohorts



Source: SUFVSKT2007, own calculations. Only people with German Nationality living in Germany.

As the pension fund receives contributions for caregivers only up to the age of 65, the data covers only care-giving in the life-course up to the age of 65. The true amount of voluntary home care in Germany is hence underestimated. Up to the age of 65, the contributions from the care insurance to the pension fund can considerably increase the old-age pension of caregivers, because the

contribution to the pension fund record is rather high compared with the cash benefit. However, care-givers are most often women who have considerably shorter periods of gainful employment in their life-course and show longer gaps in their life-course. Only less than 1% of all men in West and in East Germany have care-giving episodes in their pension fund record. This does not presume that men do not give care at all, but that they seldom fulfil the conditions of the care insurance: not being an old age pensioner and not working more than 30 hours elsewhere. However, up to now, care-giving is a female domain either as spouse or as daughter (Schneekloth et. al. 2005). For 7 % of all women in West Germany and for 5% of all East Germans [women?], we find care-giving episodes in their life-course. For the following analysis, women with and without care-giving episodes in their pension record are compared. Marked differences between those groups concerning their life-course between home work, employment, and unemployment can be found. Women with no care-giving episodes in their life-course are childless to a higher percentage and have fewer children in average.

3.4 Interpretation of the Results

The longitudinal data of the pension fund provide information on the length of care-giving activities and about the credit points earned in the pension record for this activity. Beyond this basic life course information, there can be identified however severe restrictions concerning the possible research questions that can be answered with pension record data:

- 1) There is a *time limitation* that should be considered if different age cohorts are compared. As the registration of care-giving only started in 1992 and the de-facto inclusion of voluntary home care only since 1995, the older cohorts had no chance or had it only later in the age over 50 years to earn credit points for care-giving later in their life.
- 2) The *age limitation* of 65 years of age as the maximum age for earning credit points for care-giving sets another limitation to the analysis. It is known from other research that care-giving is not limited to the age younger than 65 (Schneekloth et.al. 2005: 77).

The German pension fund has gathered information on voluntary home care for the elderly and disabled since 1992, as the government decided that, from this year on, care-giving episodes in the life-course should contribute to the old-age pension. The welfare state provision for voluntary caregivers was stepped up in 1996 with the establishment of the compulsory long-term care insurance. In the period from 1992 to 1995 it has been rather inconvenient to be registered as a care-giver. The change in the institutional framework has therefore caused the disclosure of a bigger share of the voluntary care-giving that has most likely taken place also before. The coverage of the data is, before

1995, so small for the true amount of care-giving in Germany, that the data cannot be usefully interpreted as a true mirror of the social activity care-giving.

4. Case 2: The Change in Unemployment due to the Change in the Unemployment Assistance Scheme

Unemployment assistance has been drastically reformed in Germany at the beginning of 2005. Until 2004, the unemployment assistance insurance, explicitly targeting unemployment, was available only for people with longer periods of socially insured employment in their past. Other long-term unemployed were receiving social assistance. On average, social assistance was lower and the means-testing prevented people with savings for old age or an earning partner to apply. In 2005, both institutional settings for the long-term unemployed were united. Long-term unemployed were for the first time showing up in the pension fund data, because social assistance receivers gained no pension fund credits before this institutional change. The unification of both provisions was the result of a widespread debate about the injustice of dividing the long-term unemployed into two subgroups and treating them rather differently in regard to benefits, means-testing and professional training offered as service.

4.1 The Institutions

Unemployment assistance has been drastically reformed in Germany at the beginning of 2005. Until 2004, Unemployment Assistance, explicitly targeting unemployed persons with no entitlement to Unemployment Benefit, has been administered only by the Federal Employment Agency, a federal institution. Unemployment Assistance has been considered, unlike Unemployment Benefit, to represent no insurance scheme, because it was financed from general taxes and not from contributions. However, the cash benefit has been calculated as income replacement and thereby linked to socially insured income (Ost/Mohr/Estelmann: 1998, 333). Furthermore, the Federal Unemployment Agency paid contributions to the pension fund for receivers of unemployment assistance. This additional benefit contributed considerably to the future pension of those unemployed, because the contribution has been – until the year 2000 – equivalent to 80% of the former income from employment. The contribution from unemployment assistance was then scaled down to lower amount equivalent only to half of the former income from employment. The duration of unemployment assistance has been unlimited before 2004. Unemployment assistance could therefore be received until retirement. For those who have been entitled to benefits from the unemployment scheme, the unlimited access to income replacement has been a rather generous support in case of unemployment. Unemployed persons without the necessary insurance coverage from previous employment could not rely on unemployment assistance from the

Federal Employment Agency. In these cases, the only opportunity for income support was offered from the state Social Assistance, governed and paid by the municipality. Social Assistance was lower and the means testing requirements harsher, compared to the unemployment assistance scheme (Clauss/Schnabel: 2009, 433). No contributions were paid for old age provisions to the pension fund. The long-time unemployed were thereby divided from the welfare state setting in Germany into two groups. Those with better employment history were covered from the unemployment assistance scheme and also received some benefits for their old age provision, meanwhile those with the less favourable employment history ended up in the social assistance scheme.

4.2 Institutional Changes

A major reform changed the assistance scheme for the unemployed with no entitlement to the insurance-based Unemployment Benefit from the beginning of 2005. The new scheme combined some characteristics of both former schemes. The means-testing is nearly as severe as in the old social assistance scheme. All kind of income and savings in the household is taken into account and only a small amount of savings are exempted from the obligation to spend all resources before claiming assistance. The conditions to claim the benefits are no longer considered due to the employment and insurance history, like under the old Unemployment Assistance scheme, but only by the fact of being between 15 and 65 years old and to be able to work at least three hours a day. The new cash benefit, called “Unemployment Benefit II”, is calculated as a basic benefit and not as income replacement, but it is at the same time a little more generous than the former Social Assistance. However, receivers of the new Unemployment benefit II are – in contrast to the old social assistance scheme – entitled to contributions towards their pension fund account. Admittedly, these contributions are considerably lower than the former income-replacement oriented contributions of the old Unemployment Assistance scheme. Five years of Unemployment Benefit II related contribution to a pension fund account lead to about 10 Euro in old age pension. This amount is clearly not sufficient to reach a minimum old age income above the subsistence level, which would be about 600 Euro in monthly income for one person living alone. Long term unemployment is therefore more harmful for the pension entitlements than before 2005.

4.3 Effects on the Data.

Who has Gained, Who has Lost?

The change in the welfare state setting concerning the unemployment assistance scheme for those without entitlement to the insurance based Unemployment Benefit (I) lead to an increase in the number of the unemployed in the statistics of the Federal Employment Agency. This increase is the reverse of a

less observed decrease of social assistance receiving. The general focus on this increase overshadowed the decrease in numbers of former unemployment assistance receivers who were able to qualify for the Unemployment Benefit II under the new scheme. In effect, an exchange has taken place, because of a part of the former Unemployment Assistance receivers did no longer qualify for the scheme because of their savings or the income of other household members. On the other side, former social assistance receivers from the lower entitlement threshold now are qualified for an unemployment social security benefit without ever before having been employed.

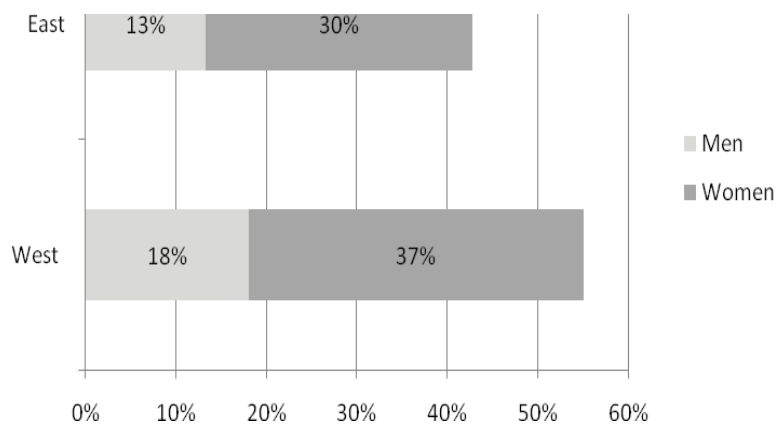
In the life-course data "Sample of the insured population records" (SUFVSKT2007), receivers of the former Unemployment assistance cease to be registered in December 2004 for the last time with contributions coming from the Federal Employment Agency. About 5% of the insured population were Unemployment Assistance receivers in December 2004, equivalent to 1.8 million people in the weighted sample.

The receivers of the newly granted Unemployment Benefits II can be identified from January 2005 on, because contributions are registered from this month on, paid from either the municipality or the Federal Employment Agency. The institutional setting for the payment of Unemployment Benefit II is not equal all over Germany. Municipalities could opt for the self-administration of the new benefit, cooperate with the Federal Employment Agency or let the Federal Employment Agency administer the service on their territory. The quality of statistical data on unemployment suffered in 2005, because this institutional makeover confronted existing institutions with new tasks, one of them being to pay contributions to the pensions fund records of the unemployed. The following analysis is therefore based on the contributions paid for receivers of Unemployment Benefit II in the whole period since the introduction of this new benefit until December 2007. A Receiver of the Unemployment Benefit II is thereby defined as every person who received this benefit for at least the major part of one month during the three years 2005 to 2007. This amounts to 6,060 cases in the Scientific Use File, equivalent to 3.2 million people in the weighted sample. Comparing the numbers of the receivers of Unemployment Assistance in December 2004 with those receiving the new benefits since 2005, we observe a marked increase in registered unemployment in an assistance scheme in the life-course data.

A closer look shows the exchange in the population covered by the old and new scheme. From all those, who received Unemployment Assistance in December 2004, only 77% qualified in the following years for Unemployment Assistance II in the years 2005 to 2007. A quarter of the former recipients have no longer been entitled under the new scheme, the majority most probably because of the stricter means test. On the other side, half of the receivers of the new Unemployment Benefit II have not been receivers of Unemployment Assistance in December 2004. A closer look unveils the differences according to

region and gender. West German Women are most likely living together with a partner whose income prohibits the entitlement to the new Unemployment Benefit II, East German Men are least likely, because household income is in average considerably lower in East Germany. Graph 3 shows that indeed West German women are the group that had lost most often the entitlement. A major proportion of 37% percent of the former female unemployment assistance receivers in West Germany have been not entitled to the new Unemployment benefits. Women in East Germany can also be considered as losers of the reform, because 30% of the unemployment assistance receivers lost their entitlement at the turn of 2005. Men have been generally less likely to lose their entitlement altogether. However, other analysis shows that those who passed over from the old unemployment assistance to the new unemployment benefit lost in average a major part of their income because the benefit was considerably lower (Schulte: 2004).

Graph 2: Who has lost Unemployment Assistance Entitlements?



Source: SUFVSKT2007, own calculations. Only people with German Nationality living in Germany.

From the point of view of the receivers of Unemployment Assistance in December 2004, women have lost most often the entitlement to income support because of unemployment. On the other side, women have been a major part of the social assistance receivers, especially in West Germany and especially as lone mothers. It is more difficult to determine who has gained from the introduction of Unemployment Benefit II from the pension fund data, because social

assistance has been not recorded. One possible approximation is to look backwards in the biography starting from the present status of being a unemployment Benefit II receiver. From those who received this benefit between 2005 and 2007 at any given time, only a minority has been supported by Unemployment Assistance in December 2004. The largest number can be found in East Germany, where close to 60% of all men have been Unemployment Assistance receivers in December 2004. The contrary is true for Women in West Germany: only a quarter benefitted already from the old unemployment assistance scheme. From this point of view, the women in West Germany have been considerably the losers of the reform, also a group that has gained due to less severe preconditions for the new Unemployment Benefit II in regard to the employment history. Again, a closer look presents a better understanding of the consequences of the welfare state changes. A rough calculation of the pension fund entitlement accumulated until December 2007 shows that the unemployment Benefit receivers have far lower entitlements. This is a sign for a different employment history, resulting in less contributions paid to the pension fund records.

4.4 Interpretation of the Results

The population showing up as long term unemployed in the data of the pension fund has changed dramatically in January 2005. The partial exchange appears as a period effect due to institutional change. The true amount of unemployment would add the social assistance receivers from before 2005 to the unemployment assistance receivers and would also cover those who could no longer receive Unemployment Benefit II after 2005, even though they had still not found a job. The institutional break in January 2005 shows that coverage of long-term unemployment in the data has been and still is rather incomplete. Only around the time of the change, the snapshot of the life-course data disclosed the greater coverage, if both unemployed with longer employment histories as well as people with not such a successful career have been included in the data.

5. Conclusion: Institutional Change, Life-Courses and Data

Welfare state institutions intervene in the life-course on many occasions and shape categories of life-course events like being a voluntary care-giver or a long-term unemployed person. The pension fund collects many information on life-course events as far, as they can possibly contribute to a higher pension fund entitlement and these informations are therefore a valuable source of more than only on socially insured employment. However, welfare state reform of other institutions like the institutionalisation of care insurance or the change in the unemployment assistance scheme alter the conditions of the registered life-

course events and stages. Consequently, it seems often not possible to monitor the effect of those changes, because the life-course events are themselves conditional upon the institutional setting of entitlement. This holds true as there has been no recording of a specific activity or situation before a given date. Period effects of welfare state reforms cannot be undone and impair comparisons of different age cohorts over time.

There are two different dimensions of data quality in regard to process produces data: coverage and accuracy. The question of coverage concerns the quantity of missing cases that should be included in the data, because a social situation fits the definitions of the administrative rule, but are not because the administration never happened to know about a particular case. Voluntary social programs like deliberate contributions for care-giving are also reasons for rather low quality of the data. Non take-up behaviour leads to an underestimation of a certain social activity or situation. It is least probable if the welfare state institution and its regulation are obligatory and well known. In the case of obligations, this is the question of a deliberate cooperation on one side and law enforcement on the other side. In the case of contributions to the social security system, moonlighting avoids those payments if it remains undetected. In the case of service non-take-up, a lack of cooperation leads to insufficient coverage if legitimate claims are not raised. The accuracy depends on the willingness of citizens to disclose all necessary information or the rigour of the state to search with law enforcement agencies. In the case of the pension fund, the information is often also coming from a third party like employers and other welfare state institutions. They are obliged to cooperate with the pension fund in order to improve the pension fund record of the insured person.

For the analysis of process produced data, therefore background information on the administrative procedure is needed in order to judge the likeliness of good data quality.

However, administrations do not necessarily produce accurate data. High quality requires accurate input from clients or third parties like employers and diligent data processing. Best data quality requires a law-enforced obligation to cooperate and deliver the right information. Data quality is generally high in process-produced social security data concerning contributions and benefits, because financial transactions are monitored from several independent parties and inspecting authorities. However, the quality of the scientific data produced from the pension fund records differs across the age cohorts. The insured persons are requested to hand over all needed information to the pension fund in order to complete the pension fund record. The pension fund tries even harder to gather all documents for those who have been chosen for the 'Sample of the insured population records' than for the rest of the insured population and retries to convince them to care for their pension fund record. Nevertheless, the proportion of insured persons who deliberately delivered all needed information is rather low in younger age cohorts. In these cases of no compliance of the

insured person with the pension fund, the record is prepared automatically for the sampling of statistical information, but gaps in the records are a result of this lack of cooperation.

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